

Original Article

Challenging play and motor experiences in the natural environment, adventure, and the perception of risk in outdoor didactic-educational places

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Abstract

The historical period that we are living in has highlighted how environments can be an additional educational resource for the development of recreational-motor activities; In particular, it has been observed how the natural environment can bring out values of a body education that focuses on adventure and exploration. This process helps children discover and get involved, make decisions, and consider risks and dangers that may arise in case of a wrong evaluation. Therefore, challenging motor activities in a natural environment, if properly organised, are distinctive elements to work on the proximal area of the child, allowing real learning mediated by experience. The individual will be forced to improve motor skills, strengthening their self-esteem and sense of responsibility. In conclusion, we will analyse some recreational-motor activities in the natural environment, including climbing as an optimal proposal for the discovery of the body self in the relationship with nature, in the discovery of sensory perceptions skills dormant that arouse emotions and wonder in children (Coco, 2013). Climbing, indeed, is a motor pattern that appears around 8-10 months in the child's attempt to pass from the quadruped to the upright position (Casolo, 2002). A vital aspect is the emotional one, and climbing certainly has a strong emotional impact on the subjects who practice it. The height, the emptiness, the possibility of falling with consequent loss of control of the situation, of equilibrium, make necessary: concentration, precision, calm, awareness and acceptance of their potential and their limits. The feelings of joy, pleasure and gratification that are particularly solicited and stimulated when reaching the goal are indispensable for those who practice this activity (Coco, 2019).

Keywords: Outdoor adventure education, challenging recreational-motor activities, perception of risk, and its limits, climbing.

Introduction

In this work, we will face up to the issue of the importance of recreational-motor experiences in evolutionary age (Lipoma, 2014), particularly in the natural environmental contexts school and not (Casolo, 2019). "The school, according to Dewey, must be structured as a unique environment in which practice and laboratory are used as the main educational methods. Work and play must not be rigidly distinct, because they are two different practical applications but both based on the principle of experimentation and testing: although the game requires commitment and application, and in this sense, it cannot be defined entirely for its own sake" (Fiorucci & Lopez, 2017, p.9). Starting from the challenge that the current historical period has highlighted, we will analyse the concepts of space as a place and educational environment to propose free and semi-structured play activities (Tortella, Haga, Ingebrigtsen, Sigmundsson, & Fumagalli, 2019). and then focus on recreational adventurous motor activity in a well-structured outdoor environment in precise educational settings (Coco, 2019). The concepts of risk perception and the challenge' concept will be treated as peculiar elements of learning motor education. It will take as an example of outdoor activities the game-sport climbing to highlight the emotions and limit's concept as potential on which to work individually and in a group. Finally, some didactic and educational models on outdoor education will illustrate that they develop self-awareness and self-control even outside the contexts indicated thanks to their component of discovery and management of emotions.

Method

The work presented here aims to reflect and analyse the characteristics in which motor activities present in different environments: outdoor and indoor.

The literature survey was carried out by national and international databases such as Google Scholar, OCLC Worldcat and EBSCO Publishing and deepening the topic in some scientific journals of pedagogical, educational and motor and sports education.

The keywords used for this research were: school, Outdoor Adventure Education, risk, climbing. Found in titles and abstracts of various scientific contributions plus additional filters were applied to narrow the results

and make them more specific. Other filters have also been included, for example, in the language (English) and the year of publication of the scientific contribution starting from the historical pedagogists to the most modern ones.

The search results have been divided into areas of interest: the ludic-motor education at school; educational environments and Outdoor Adventure Education; risk perception and challenge as learning methods in natural environments; peculiarities and factors characterizing the game-sport climbing.

Results

The ludic-motor education at school

In the face of the inspiring principles of physical education for primary school, the role of body activity, play, game-sport as integral development of the child and how, through an educational path, can acquire the intellectual and cognitive functions (Tortella, Schembri, Cecilian, & Fumagalli, 2020), to grow in harmony with himself and with the surrounding world (Sgrò, Quinto, Messana, Pignato & Lipoma, 2017).

The school, however, alone, cannot take charge of the education of the child. In fact, we believe that the family, the ASD (private sports associations) (Sgrò, Coppola, Tortella, & Lipoma, 2020), the social context must do their part. However, unfortunately, adults are increasingly busier, immersed and submerged by many things to do, parents who are engaged in too serious a professional situation to waste time with their children. Children are being moved, here and there, in a vortex of weekly activities that create fragmentation and disorientation if there is no joint educational project. The teachers feel inadequate (Vago, Coco, Colomb, Frattini, Gatti & Casolo, 2015b) compared to a "motor expert" (Vago, Coco, Colomb, Frattini, Gatti & Casolo, 2015a) and are taken from the educational programs, and finally the Asd (private sports associations) that chase the competition and the performance make us ask the following questions.

Who plays with children? Where? Who brings them to this fantastic world? Who gives precious time to them? Who speaks to them, and who listens to them? Who educates them? (Coco, 2015). "The construction of the educational style cannot be entrusted to simple occasional interventions, mono or bi-weekly, nor to episodic moments of availability: invokes the daily commitment of everyone, of the father and mother to engage the communicative fabric of values, despite the inevitable difficulties and limits set by the rhythms of life" (Pati, 2014, p. 112).

This observation brings to the surface the consolidated memories of our past, experiences that belong to our history and childhood when it was possible to play freely. Today we are trying to resort to shelters "reconstructing such spaces in gardens and protected places, in the city paths, on festive occasions, of childish games, race races. We have tried and still trying to rebuild dignity to the spontaneous play of children. This dignity also and especially requires ad hoc places, so that the experience of the game can be re-lived in all its formative power: of freedom and joy, precisely" (Cambi & Staccioli, 2008, p. 237). Playing has an important role in child development because children learn through play (Duque, Martins, and Clemente 2016).

Can the school and the world of education meet this new need? With what activities and experiences? In which contexts and educational places? With what methodologies and new skills and abilities? "But in a context in which many aspects and factors of daily experience are a source of learning, to understand what is "pedagogical" in the different situations of the social, it is also necessary to be "pedagogically" oriented, that is to have a "toolbox" for understanding the characteristics of different forms of education" (Fiorucci & Dozza, 2019, p.17).

It is the relationship with the educator brings the child to understand the charm and to follow him, this conquers every child and can help him to grow, are those faces that treat him differently, that is so that he feels affirmed and esteemed for what he is, taken seriously and trusted in his potential, some of which still to be expressed (Coco, 2014a).

Educational environments and Outdoor Adventure Education

The conditioning provided by the structuring of the spaces becomes an even more central issue in the context of educational-educational practices arranged in natural outdoor environments, that foresees the change of perspective that concerns the entire setting and all aspects of activity, action and educational relationship (Fischetti, Cataldi, Di Terlizzi & Greco, 2020). "The educational environment, in other words, must be an inhabited space and not immediately, a place that involves the body in action, participation, research and discovery, a real facilitator of action, which guides and supports personal learning experiences" (Cecilian, 2019, p. 117). The consequences of this continuous, orderly and for all children can be traced back to three main areas such as: "the one aimed at the prevention of certain pathological situations that are particularly recurrent today, a second that examines the state of form and well-being of the child, and finally that which studies the contribution of movement in the process of maturation of the cognitive system with its implications on school learning and self-control" (Casolo & Coco, 2019, p.38).

In this sense, the educational experiences conducted beyond the boundary of the classroom become privileged opportunities, capable of initiating direct paths of knowledge that pass from sensory, involving the subject, in a global way, in all its languages, motor, symbolic, representative, which support knowledge circuits oriented to exploration and experimentation, which encourage the acquisition of autonomy (Tomarchio, La Rosa

& D'Aprile, 2018). Students are increasingly disconnected from the practice of physical activity in the natural environment that surrounds them (Hortigüela, Hernando, Sánchez-Miguel, 2017).

We could distinguish according to the target audience of the Outdoor Education (OE), which deals with various proposals, specified respectively in: Outdoor Learning (OL), belonging to the formal school sector; Outdoor Adventure Education (OAE), with the more specialized non-formal out-of-school offer.

Peculiar characteristics and recurrences that connote outdoor educational experiences concern the activation of communicative and cognitive channels related to corporeity. With a high degree of bodily involvement in the integrated sense, outdoor activities place the subjects in danger, forcing them to leave their safe zone, thus activating processes of progressive achievement of the different autonomies, not only motor but also related to emotional self-regulation (Carpi, 2017).

The educational and training importance of OAE programmes has for decades been regarded as reasonably certain by both experts and public opinion, and several scholars have recognized the weakness of empirical evidence supporting this claim (McKenzie, 2000).

Fortunately, today's culture is changing, bringing new scientific lymph to current research. The values recognized to OE by the scientific community rely mainly on methodological rigour aimed at the actual impact both on the activity (Pelchat & Karp, 2012) and on the actual change of participants (Cason, Gillis, 1994).

There is a need to carry out more reflections in particular on the systematic investigations, in particular on the meta-analysis of Neill (2002), who summarizes and elaborates primary research on, for example, adventurous programmes (Hattie, Marsh, Neill, & Edwards; Hans, 2000; Marsh, 1999) and climbing (Bunting & Donley, 2002; Gillies & Speelman, 2008). These meta-analysis studies report changes in various personal and social skills, including self-efficacy and independence, leadership and decision-making ability, relational skills, physical fitness and well-being, an improvement in proactivity and coping behaviour, that is, in knowing how to face problems and react to adversities (Farné, Bortolotti & Terrusi, 2018).

Thus, we can assert that today's empirical research reveals the presence of slight and moderate changes in the individual capacities of the participants in the OAE programmes. These results provide scientific support relevant to the educational didactic-pedagogical reinforcement and as social activities and procedures regarding OE, proving the effectiveness of training also in motor and sports activities, especially if challenging and adventurous. "An experience can be defined as successful when it is able to create the feeling of personal effectiveness and effectiveness on the environment. It is therefore necessary to choose activities that can maximise the potential of participants. Similarly, failures also have an educational character: they teach that success usually requires an effort" (Valentini, Guerra, Troiano & Federici, 2019, p. 422).

Risk perception and challenge as learning methods in natural environments

In order to count how the risk can be evaluated as a strategic educational device (Brandão, Pereira, Gonçalves, Coelho, & Quaresma, 2018), it will be necessary both to insert it in the appropriate design framework and to consider it part of a sort of "initiatory game", as a game, leaves the possibility for subjects to experience risk in a dimension of absolute safety (Karaca, 2020). No educator, in fact, would expose his educators to unnecessary dangers or would never go beyond the limit allowed for their safety: the "risk" acts as an activating agent and experience must be placed in a "zone of proximal development" (Vygotskij, 2007). "In primis it is necessary define the risk zone and the safe zone as a psychological topology: they are areas that border with the environment beyond the body, perceived as safe and/or risk in the experiential practice of the environment itself.

The risk zone is a zone of cognitive dissonance, emotionally stressful, which requires creative and innovative coping strategies, as well as emotional tension that requires control. But this does not mean the end of the organism, but rather its destabilization. However, the safe zone is the reproduction of the already known and experientially known, so the event is cognitively predicted. The risk zone is a place of learning, especially in its confine between the safe zone and the risk zone, as well as in the development of new safe zones" (Galiazzo, 2012, p. 64). According to the literature, we observed that risk factors are divided into environmental and human factors (Gavira, Llerena, Nicaise, & García, 2018).

AE practices can contribute to pursuing essential objectives such as: developing a balanced attitude towards risk; learning to confront one's limits; increasing self-effectiveness; avoiding counterphobic attitudes ("knowing how to give up"); acquire the necessary cognitive flexibility to be able to move along a continuum according to the feelings you face; encourage self-expression in a pro-social and not selfish sense or, worse, self-destructive and antisocial (Brega, 2012., p. 63). We can affirm that the experiences of AE have the ability to connect the emotional/cognitive/instrumental/ relational components, seen that the ways of the knowledge are "primitive" and emotional.

This challenge requires precise actions geared to (Gigli, 2018 p.126): take self-awareness, both of negative pressures and positive stimuli that come from individuality in crisis and transformation processes; elaborate a horizon of possibilities, even utopian, even dream, but a horizon to tend to overcome existential disorder; refine the ability to put into practice their intentions with sensibility and sense of reality; accept the limits; develop resilience also thanks to the positive relationship with each other by itself.

We could say that the educator is literally challenged by the activities he proposes. He will have to deal with these dimensions personally and at the same time maintain the role of leader, considering whether to be joined by technical personnel specialized in support if the activity or the circumstances requires. Nature, in fact, can be sweet, charming, pleasant, engaging but also cold, extreme, brutal, impetuous and impartial. All this favours the development of equilibrium, as Aristotle would say, right means, understood as the ability to dose forces, energies and concentration according to different situations, experiencing the pleasure of control of the body (Fischetti, Latino, Cataldi & Greco, 2020), mind and emotions, in appreciating life and everyday life. Therefore, it was necessary to adapt the methodological-didactic approaches to the different disciplines (Sgrò & Lipoma, 2015). The present findings carry critical practical implications in view of programs aimed to promote youth's adaptation and well-being in their passage to adulthood, especially on self-efficacy (Steca, Caprara, Tramontano, Vecchio, & Roth, 2009).

Peculiarities and factors characterizing the game-sport climbing

In climbing, the child learns to be responsible for himself and his companions (Lloyd, 2012). "Therefore, for the purpose of climbing games and climbing, the most appropriate method to prevent "risk situations" is to teach minors the ability to observe, recognize and independently assess situations of potential danger"(C.A.I., 2009, p. 284). "In fact, one very important aspect of climbing is the emotional one. The height, the emptiness, the chances of falling with consequent loss of control of the situation, of balance, make necessary: concentration, precision, calm, awareness and acceptance of their potential and their limits. (...) Defining the peculiar aspects of sport climbing is a factor that particularly characterizes those who practice this sport: *the H Factor* taken from the geometry, is the symbol that indicates the height" (Coco, 2014b, p. 212). It is from this dimension that, already from the first development, the child and then the adult will articulate the motivation that will lead them to the sensory experience, proprioceptive and emotional verticality, Yilinx, Vertigo (Caillois, 1958). One point in favour of those who practice the game-sport climbing is the height; the exploration of vertical space forces to climb upwards, this climb becomes a metaphor of emotional and exploratory experience in the conquest of the personal goal, of the latest trick called in jargon "Top" (Coco, 2014b). Another important element that characterizes the climbing game-sport is the climber's *Factor Ge.Co.* (Coco, 2019, p. 240). The term Body Geography (Ge.co.) of the climber means the relationship between one's own body and the structures to be climbed, and it is intended to develop:

- 1) Knowledge, awareness and mastery of the body in the climbing game.
- 2) Space-time organization in the climbing game.
- 3) Lateral dominance in the climbing game.

The climber is forced in a natural way to know his body and to know how to manage, to develop the spatial-temporal organization, especially concerning the climbing wall or the wall bars, and to use the right and left side of the body. It is also seen as a legitimate educational activity that would encourage each participant's physical, mental, social and emotional growth (Ceciliani, Bardella, Grasso, Zabonati, & Robazza, 2008). The predominant concept in sport climbing is the limit.

Limit intended not as an insurmountable barrier but as a challenge with himself and with others, as an attempt to gradually overcome their skills: this is the element from which arises the most excellent satisfaction for an athlete, therefore will be defined *Factor Challenge* (Coco, 2019). "In the case of the experienced climber, not accepting the flight and not trusting the companion that ensures, will not allow him to express his potential completely and will not allow him to identify his limit clearly and its exceeding" (Bressa, Capretta & Denicu, 2010 p. 83). The concept of "limit and stress" therefore represent a central aspect in sport climbing. (Tukaiev et al., 2020).

A general concept among athletes is "*it's all in your mind*", which points to the idea that the limits are in our minds so that they can overcome. From this statement, it is suggested the existence of three different types of limit. The first, called "psychological limit", which Arno Ilgner (2017) defines as a "safe zone", is linked to difficulties, fears, beliefs not based on a rational plan. A second limit, defined as a "physical limit" by Vygotskij (2006), who calls it a "potential development zone", is linked not to mental factors but to physiological characteristics such as muscle or tendon strength and joint mobility. Among these areas can be introduced a third type of limit, called "technical limit" experiential limit, linked to the learning of specific sports climbing skills, such as the ability to identify the predominant and resolving features of the wall or the acquisition of an adequate repertoire of specific fundamental movements. The individual development path of psycho-physical-performance growth is then played between the area, between the "psychological limit" and the "technical limit".

This element makes those who practice sport climbing develop strength, endurance, mobility, a high level of proprioception that allows the precision of movements, muscle control, consciousness, awareness, control of the body and its potential; the performance is therefore strongly influenced by the concepts of personal limits and environmental limits (Galvani C., et al. 2017). Specific training will need to be done; for example, Biomechanical studies (Elia, Domenico, Isanto, Altavilla & Raiola, 2020) provide professionals with indispensable tools for planning and structuring effective work protocols for the improvement of certain motor gestures and prevention and injury recovery (Raiola, Domenico, Isanto, Altavilla & Elia 2020). This applies especially to the training of children, beginner climbers since childhood is a time in which motor habits are being

formed, and the proper technique of climbing is being studied (Vidinovski, & Belomazheva-Dimitrova, 2018). Therefore, it will be necessary to work intensely on one's own limits to discover one's own potential, with all the emotional-affective effects that this will imply, putting one's self at stake.

Discussion and Conclusion

Motor activities in an outdoor environment show how the contact with nature and the relative perceptions of its spaces if adequately programmed and supported by physical education specialists (Casolo, Coco, Frattini, Vago, & Casolo, 2019), can be a great resource and an educational tool both for a proper lifestyle and for an adequate cognitive development of the child. "Our purpose is then to examine how the child becomes what is already in power, unique and unrepeatably person, rich of faculties and possibilities that find the conditions to better develop in those created contexts which are necessary for its growth and preparation" (Chistolini, 2015, p.36). For its challenging intrinsic factor, the sport climbing game helps develop strength, endurance, mobility, high proprioception and self-awareness and emotions, control of the body and its peculiarities. Never as in this period, post-covid-19, the problem of non-use of one's body has emerged (Coco, Casolo, Supital & Sopranzi, 2020). This prevents the development of self-mastery, perceptions, and, last but not least, of their satisfaction.

In order to help this need, effective educational, psycho-pedagogical tools can be studied for the development of the movement in the natural environment. This experience is not only a pleasant activity that puts the individual in contact with the environment that surrounds him, but - most importantly - it forces the individual who practices it to experience it directly.

Furthermore, when playing outdoors, children grow emotionally and intellectually by enjoying their environment, participating in dramatic play, developing initiative, and acquiring an understanding of basic concrete concepts, such as investigating the property of objects and of how to accomplish a simple task (Ceciliani & Bortolotti, 2013).

Author Contributions

The article is the result of a collective work of the authors, the specific contribution of which is to be referred to as follows: Coco D., Conceptualization, Methodology, Writing-Review & Editing, and Supervision and in particular paragraphs n. 3.2; 3.3; 3.4. Casolo F., Conceptualization, Literature Analysis, Writing-Original Draft Preparation, and particular paragraphs n. 2; 3.1. Fiorucci M., Conceptualization, Investigation, Writing-Review & Editing, and Supervision. and in particular paragraphs n. 1; 4. All authors discussed the results and contributed to the final manuscript.

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